

**Abstract of the Disclosure**

The present invention provides a method, apparatus and computer readable medium for allocation of an available power to Discrete Multi-Tone (DMT) frequency tones in a DMT-based Digital Subscriber Line (DSL) modem. In one embodiment, the method includes the steps of: initializing the DMT-based DSL modem by calculating aggregate values of channel attenuation, noise power, and power mask; pre-filtering to flag noisy bins that are unable to support a minimum number of bits with the maximum power available for transmission in a bin; and using a repeated-bisection splitting scheme to allocate the available power substantially optimally among a plurality of bands for DMT frequency tones.